1 1 12-711 12-7111 12-7111

"The Disney-Von Braun Collaboration and Its Influence on Space Exploration"

Mike Wright

NASA Marshall Space Flight Center, Huntsville, Alabama

The years after World War II left the American public with an almost insatiable desire for space-related science fiction. In countless movies and stories space warriors suited with fish bowl helmets focused their ray guns on creatures from outer space. According to space historian Walter McDougall, "After V-2s and atomic bombs, any fantasy seemed credible." Perhaps more important, he says, the public's post-war devotion to science fiction was a "form of cultural anticipation" regarding the coming space age.

Jules Verne's science fiction had inspired Wernher von Braun when he was young. Years later, von Braun designed the famous World War II V-2 rocket for his native Germany, but he also dreamed of developing vehicles that would propel artificial satellites and men into outer space. In fact, his interest in developing rockets for space exploration, rather than for defense, angered the Gestapo and led to As World War II ended, von Braun and two weeks in a German prison. other German rocket experts surrendered to Allied forces and eventually emigrated from Germany to work for the U.S. Army. Initially assigned to Fort Bliss, Texas, the von Braun team was eventually transferred to Redstone Arsenal in Huntsville, Alabama. On January 31, 1958, the von Braun team used a modified Jupiter C rocket to launch Explorer I, America's first orbiting satellite. Two years later, von Braun become director of NASA's new George C. Marshall Space Flight Center in Huntsville where he and an expanded team would develop the Saturn rockets that launched men to the moon in 1969.

As the 1960s ended, von Braun had realized his dream of exploring outer space by helping place a human on the moon and satellite probes to the planets. His engineering and managerial expertise contributed to a technological revolution but his respect for the power of imagination had changed the way America perceived space exploration much earlier in the 1950s. He believed that America's devotion to space fiction in the early 1950s could be channeled into interest in space fact. "It was a matter of synthesizing the philosophical aspects into neat packages and solid statements which the public would buy," according to Erik Bergaust, von Braun's biographer.

In the early 1950s, <u>Collier's</u> magazine invited von Braun to publish his vision regarding space exploration. Space historian Randy Liebermann has explained the significance of the Collier's articles:

"After 25 years of continuous and directed thinking and endless hours of experimentation, von Braun, the world's leading rocket engineer, had the chance to come out of his sequestered military environment and through a national magazine inform the general public of his detailed blueprint for realizing manned space travel."

The articles, illustrated by leading space artists, seemed to accomplish more than any other seriously respected cultural or artistic medium had done in the early 1950s to suggest that the future of space exploration would emerge indebted to both science fiction and science fact. At its highest point, Collier's attained a circulation of approximately 4 million and these readers were excited by von Braun's vision of the future. Even so, there were already more than 15 million television sets in America by 1952 and von Braun recognized that this change in American culture had the potential to fundametally reshape American past perceptions. So did Walter Elias Disney who had used film as a powerful medium to entertain and inform Americans since the 1940s. "Neither Walt Disney nor Dr. von Braun were ever backward in making maximum use of new media for advancing their ideas: now was the age of television," said one observer.

Von Braun served as technical advisor on three space-related television films that Disney produced in the 1950s. Together, von Braun (the engineer) and Disney (the artist) used the new medium of television to illustrate how high man might fly on the strength of technology and the spirit of human imagination. According to David R. Smith, Director of Archives at Walt Disney Productions, von Braun caught the attention of Disney senior producer Ward Kimball. The Collier's series had appeared about the time that Disney decided to use television to promote Disneyland in California. The theme park would include four major sections, Fantasyland, Frontierland, Adventureland and Tomorrowland. Disney producers would incorporate ideas from Disney fantasy films like Snow White, Pinocchio, and others to promote the first area of the park. The second and third areas would be built around Davy Crockett and other adventure films. Tomorrowland, however, represented a real challenge. In response, Kimball contacted von Braun who, according to Smith, "pounced on the opportunity." technical consultant for Disney, von Braun would join Heinz Haber, a specialist in the emerging field of space medicine, and Willy Ley, a All three space experts had authored the famous rocket historian. Collier's series. Disney personally introduced the first television show, "Man in Space," which aired on ABC on March 9, 1955. The objective, he said, was to combine "the tools of our trade with the knowledge of the scientists to give a factual picture of the latest plans for man's newest adventure." He later called the show "science factual." The show represented something new in its approach to science. But it also relied on Disney's trademark animation techniques.

For example, a portion of the show was devoted to explaining basic scientific principles using an animated bust of Sir Isaac Newton. In one scene, an animated puppy sneezes and moves backward across a sheet of graph paper to illustrate that for every action there is an equal and opposite reaction. Disney also filled "Man in Space" with stereo-typical images of learning and science. For example, Disney appears on camera against a bookcase backdrop and introduces producer Ward Kimball complete with a sketch pencil behind his ear. In turn, Kimball introduces the German scientists whose accents add more style to the show. Kimball then offers viewers the privilege to go behind the scenes to see the scientists conferring with the Disney artists. Chalk-talk technical explanations soon break into humorous animation. Haber begins explaining weightlessness in space. His points are illustrated by a cigar puffing, slightly clad animated character called "homo sapiens extra terrestrialis," whose movements are set against a graph-like grid. Although the Disney producers employed humor and cartoon animation in the first part of "Man in Space," von Braun's on-camera segment was much more straightforward. "If we were to start today on an organized, well supported space program, I believe a practical passenger rocket could be built and tested within ten years," von Braun said. "Now here is my design for a four-stage orbital rocket ship... First we would design and build the fourth stage and then tow it into the air to test it as glider... This is the section that must ultimately return the men to the earth safely."

If Disney had chosen to close "Man in Space" after von Braun's brief lecture on the mechanical relationships between the weight of the four-stage rocket and the fuel and power requirements for each stage, he would not have achieved his previously stated objective. Instead, the Disney artists used the tools of their trade to create a dramatic animation sequence illustrating von Braun's futuristic ideas for a four-stage rocket. The scene takes place at a launch site on a "small atoll of coral islands in the Pacific where man is dedicated to just one cause — the conquest of space." Against a dark blue pre-dawn sky, search lights bathe the waiting launch vehicle while sirens sound a warning, and square-jawed technicians study their consoles. "Now man will bet his life against the unknown dangers of space travel," a narrator reports.

In reality, von Braun's on-camera appearance in "Man in Space" and the other two films represented only a portion of his involvement in the actual production of the three shows. Dr. Ernst Stuhlinger, who had worked with von Braun since his days in Germany, also worked for Disney as a technical consultant. According to Stuhlinger, von Braun made sure the Disney artists built accurate models of the space vehicles for the three shows. "Here von Braun was really on home grounds...

He provided a wealth of information on technical details, from in-orbit fueling operations down to problems of cooking and eating under weightlessness," Stuhlinger said. He also recalled the many hours that von Braun devoted to the Disney projects. Von Braun's official duties for the Army often took him to the West Coast to meet with Jupiter and Redstone contractors. After the meetings, he and Stuhlinger would go to the Disney studios where they would work into the morning hours with the artists and producers.

The second show in the series also aired in 1955 and was called "Man and the Moon." It began with an animated sequence devoted to legends and superstitions regarding the moon, among them the idea that the left hind-foot of a rabbit found in a graveyard during the dark of the moon will bring good luck. As one reviewer wrote in the New York Times following the show which aired on December 28, "this is the kind of material that Walt Disney's technicians can devise their brightest graphic effects and they made the most of it."

An educational brochure published to promote "Man and the Moon," said, "This film presents a realistic and believable trip to the moon in a rocket ship - not in some far-off fantastic never-never land, but in the near foreseeable future." Von Braun, complete with a slide rule in his pocket, narrates a section of the film and describes his ideas for a two-phase trip to the moon. The first part of the effort would require building a space station. This base would serve as the staging area for the second part of the trip to the moon. "Our space satellite (station) will have the shape of a wheel measuring 250 feet across. This outside rim will contain living and working quarters for a crew of 50 men," von Braun said. "Just below the radio and radar antenna is an atomic reactor. Its heat will be used to drive a turbo generator which supplies the station with electricity."

Disney archivist David Smith noted that von Braun invented a special space suit for "Man and the Moon" and nicknamed it the "bottle suit." According to Stuhlinger, the suit resembled a miniature space vehicle with its own atmosphere and rocket propulsion system along with manipulator arms to accomplish assembly work in orbit. Just as he had done in "Man in Space," Disney decided to illustrate von Braun's technical concepts. For the second show, however, Disney decided to use live actors who portray an astronaut crew departing from the space station for their journey around the moon. The drama intensifies when a meteor strikes the ship, and one astronaut dons a bottle suit to make the repairs.

The final show in the series aired on December 4, 1957, and was entitled "Mars and Beyond." E.C. Slipher, an astronomer from the Lowell Observatory in Arizona, joined von Braun and Stuhlinger as technical consultants on the film.

All three appeared on camera. The show also included colorful animated accounts of the legend and lore related to Mars. The narrator introduced the segment featuring von Braun and Stuhlinger by saying, "at the present time an atomic-powered space ship has been suggested by a leading scientist in the rocket and guided missile field, Dr. Ernst stuhlinger... This atomic electric space ship features a revolutionary new principle that will make possible the long trip to Mars with only a small expenditure of fuel." Again the Disney artists employ dramatic animation to convey stuhlinger's and von Braun's technical explanations regarding the 13-month journey to the Red Planet.

An estimated 42 million people saw the first show in the Disney Contemporary television critics "science factual" series. responded favorably to all three shows, and they recognized the contributions that von Braun and the other technical advisors made. "Into it went the thinking of the best scientific minds working on space projects today, making the picture more fact than fantasy, one reviewer said after seeing "Mars and Beyond."

Disney producer Ward Kimball realized all three shows were headed for success after the first one aired on March 9, 1955. On July 29, 1955, President Eisenhower announced that the U.S. would launch a small unmanned earth-circling satellite as part of the U.S. participation in the International Geophysical Year which would be held from July 1957 On August 24, Kimball wrote a letter to von through December 1958. Braun saying that in order to promote plans for the next show in the series, the Disney studios planned to "ballyhoo" the first show as an item that contributed to Eisenhower's satellite announcement. an August 30 letter back to Kimball, von Braun reacted with astonishment. "For God's sake don't put it that this show triggered the presidential announcement." Kimball agreed and replied with a Von Braun feared that Kimball's idea might be letter of apology. 20 embarrassing and upset serious discussions regarding America's future role in space.

In an article published in 1978, David R. Smith, the Disney archivist, reprinted the correspondence between Kimball and von Braun. He also published an account from Kimball which stated that on the morning after "Man in Space" aired, Eisenhower called Disney to compliment him on the show and to request a copy that could be shown to top space-related officials in the Pentagon. Although it is difficult to verify Kimball's account, the story has gained increased attention in recent years. For example, one historian has recently used it to illustrate that, contrary to other viewpoints, Eisenhower was not "hostile to the idea of space exploration or to science in general."

Eisenhower's personal response to the first Disney film is open to debate. However, "Man in Space," apparently impressed one high-level Soviet space official. This is indicated by a copy of a September 24, 1955, letter from L. Sedov to F.C. Durant, President of the International Astronautical Federation. "If the Disney Studios supplies us with one copy of this film on whatever terms it may put it will make considerably for the cause of promoting our contact." Erik Bergaust, von Braun's biographer, called Sedov the "front man for Russian space delegations during the Sputnik era." Bergaust also claims to have introduced von Braun to Sedov in 1958.

Naturally, many leaders in the emerging American aerospace industry endorsed the efforts that von Braun and Disney had made to promote public interest in space exploration. In 1955, the American Rocket Society held its largest-ever regional meeting in Los Angeles. As part of the entertainment for the meeting, more than 600 persons were invited to tour Disneyland and participate in a special screening of "Man in Space."

As indicated by von Braun's response to Kimball's plan to relate the Eisenhower satellite announcement to the first Disney space show, von Braun wanted to avoid any indication "that I myself through the vehicle of the Dispey Studio am trying to get credit for more than I Biographer Erik Bergaust has written that von Braun understood the perils of going to the public for support for the space program: "During the fifties, many people thought of von Braun as some sort of science fiction hero who for the most part was dreaming of big space conquests and who spent most of his time on Walt Disney television shows... some high priests of science were, of course, snobbish enough to frown on all this loud glamour." Another author has written that the Walt Disney documentaries and the Collier's articles made von Braun a "space nut" or a "space hero." In 1958, one von Braun supporter lamented "the discouraging spectacle of hard headed and reputable scientists calling the latest proposal of Dr. Wernher you Braun to send a man 150 miles into space a 'circus Ernst Stuhlinger acknowledges that von Braun was aware of being criticized for promoting space outside of previously established circles. But he adds that von Braun's desire to see man travel into space meant convincing scientists, industry, politicians and, in particular, the public. "He fought on all fronts each in its own language. That was his genius, " Stuhlinger said.

In 1965, 10 years after "Man in Space" first aired, von Braun invited Disney and others involved in the 1950s films to tour the Marshall Space Flight Center.

Von Braun and his employees clearly hoped that the reunion might rekindle Disney's enthusiasm for space exploration. One Marshall official wrote, "Out of this we would at least establish good will, and maybe (if we play our cards right) we could get something going that would be of tremendous benefit to MSFC, Apollo, NASA, and the entire space effort." Von Braun himself wrote that the Disney tour "may easily result in a Disney picture about manned space flight." On April 13, 1965, Walt Disney, his brother Roy, and other Disney executives visited the Marshall Center. In an interview with the Huntsville Times, Disney said, "If I can help through my TV shows... to wake people up to the fact that we've got to keep exploring, I'll do it." In reality, the tour at Marshall and other NASA sites did not inspire Disney to use the 1950s television series as a model for a new film about space exploration. No doubt, Wernher von Braun was well qualified to imagine what the show and the future American space program might have looked like if Disney had chosen to do so.

Walter A. McDougall, ...the Heavens and the Earth: A Political History of the Space Age (New York: Basic Books, 1985) p. 100.

<sup>2</sup>Wernher von Braun and Frederick I. Ordway III, <u>History of Rocketry and Space Travel</u> 3d revised ed. (New York: Thomas Y. Crowell Company, 1975) p. 108.

<sup>3</sup>Erik Bergaust, <u>Wernher von Braun</u> (Washington, D. C.: National Space Institute, 1976) p. 161.

Randy Liebermann, "Wernher von Braun and <u>Collier's</u> Magazine's Man in Space Series," 37th Congress of the International Astronautical Federation, Innsbruck, Austria, October 4-11, 1986.

<sup>5</sup>The Encyclopedia Americana, 1990 ed. s.v. "Collier's", s.v. "Television."

<sup>6</sup>Adrian Perkins, "The 1950's, A Pivotal Decade," <u>Spaceflight</u>, July/August 1983, p. 323.

David R. Smith, "They're Following Our Script: Walt Disney's Trip to Tomorrowland," <u>Future</u>, May 1978, p. 55. Mr. Smith's article represents the best overall account of the three Disney space-related films. Randy Liebermann also presents an excellent account of the films in an essay entitled "The Collier's and Disney Series" in Frederick I. Ordway III and Randy Liebermann eds. "Blueprint for Space: Science Fiction to Science Fact (Washington and London: Smithsonian Institution Press, 1992) pp. 135-146.

8 Ibid.

9 Ibid.

The author is grateful to the Walt Disney Company for the opportunity to borrow copies of all three Walt Disney films mentioned in this paper. The material cited in this section of the paper is from the film "Man in Space." Some of the material cited in latter portions of the paper is from the film "Man and the Moon," and from the film "Mars and Beyond."

11 "Man in Space."

12 Ibid.

13 Ernst Stuhlinger, oral history interview by Mike Wright, December 17, 1992, Huntsville, Alabama.

14 "Man and the Moon."

- 15 J. P. Shanley, New York Times, December 29, 1955, p. 41.
- The material cited here is from a brochure describing the Disney film, "Man and the Moon." The text was prepared by the Division of Audio-Visual Education, Los Angeles County Schools.
  - 17 This is from the film, "Man and the Moon."
  - <sup>18</sup>smith, p. 60.
  - 19 Stuhlinger Interview.
  - 20 "Man and the Moon."
  - <sup>21</sup>Ibid.
  - 22 Ibid.
- Willy Ley, Rockets, Missiles, and Space Travel (New York, The Viking Press, 1961), p. 331.
  - <sup>24</sup>TV Guide, March 5, 1955, p. 9.
- Eugene M. Emme, ed., <u>Aeronautics and Astronautics: An</u>

  <u>American Chronology of Science and Technology in the Exploration of Space, 1915-1960</u> (Washington, 1961), p. 78
- Letter from Ward Kimball to Wernher von Braun, August 25, 1955, reprinted by Smith, p. 59.
- Letter from Wernher von Braun to Ward Kimball, August 30, 1955, reprinted by Smith, p. 59.
- $^{28}$ Letter from Ward Kimball to Wernher von Braun, September 1, 1955, reprinted by Smith, p. 59.
  - <sup>29</sup>smith, p. 59.
  - 30 Ibid.
- Rip Bulkeley, The Sputniks Crisis and Early United States

  Space Policy, A Critique of the Historiography of Space (Indiana
  University Press, 1990), p. 128. It should be noted that the Office of
  the Historian at the Pentagon as well as the archivists at the
  Eisenhower Library were unable to locate documentation supporting
  Eisenhower's interest in the Disney films.
  - 32 Letter from L. Sedov to F.C. Durant, 24 September 1955.

- 33 Bergaust, p. 488.
- 34 John W. Herrick, "Los Angeles Meeting Attended by Over 500," <u>Jet Propulsion, Journal of the American Rocket Society</u>, March 1955, pp. 652-654.
  - 35 Letter from von Braun to Kimball, August 30, 1955.
  - 36 Bergaust, p. 488.
- $^{37}$  "The World Pays Tribute to Wernher von Braun," The National Space Institute. There is no date on this pamphlet. It was prepared following von Braun's death.
- 38 I.M. Levitt, "Is von Braun's Plan a 'Circus Stunt'?" Army Navy Air Force Register, May 10, 1958.
  - 39 Stuhlinger Interview.
- Letter from Wernher von Braun to William Bosche, January 8, 1965. Mr. Bosche represented one of von Braun's key contacts during his involvement in the three Disney films.
- Affairs Office at the Marshall Space Flight Center.
- <sup>42</sup>Note from Wernher von Braun to Bart Slattery. This is a handwritten note initiated by von Braun and sent to "Bart." It is dated "3/6," probably March 6, 1965.
  - 43 Von Braun Daily Journal, Tuesday, April 13, 1965.
- 44 Bob Ward, "Walt Disney Makes Pledge to Aid Space," <u>Huntsville</u> <u>Times</u>, April 13, 1965, p. 1.

To be initiated to the responsible horse Project Officer, Decreased Monitor, criather appropriate in NASA official for all presentations, reports, paders, and orderedings that contain scientific and technical information. Explanations are on the back of this form and are presented in greater detail in NHB 2200.2, TWASA Scientific and factorical Information Handbook."	☐ Original ☐ Modified	-CASI Uss Onivi  Centrer No  Date	
1. DOCUMENT/PROJECT IDENT/PICATION (aformation contained on report documentation page should not	us repeated except alter	date and confract number)	
Title:		Tripingline dine tour spills lad fire a poors, die o representation delle calle con en constitue de	
Author(s).  Originating NASA Organization:			
Originating NASA Organization:  Performing Organization (if different)			
Contract/Contract agency/Project Number(s)			
Document Number(s)		Document Da	te
the determinant model in the control of the control	ention such as name. Int	acii and date of conference. D	enodical or journal title.
(For presentations or externally published documents, enter appropriate information on the intended published or book title and publisher.  These documents must be routed to NASA Headquarters, international Affairs Division for approval. (See	Section VII))	The second secon	
B. AVAILABILITY CATEGORY Check the appropriate category(ies): Security Classification:	r submission of this form	n for approval.	,
Other—Specify      Check one of the following limitations as appropriate:      NASA contractors only      NASA contractors only	n. Preliminary information ors and U.S. Government	☐ Information bub to s	overnment agencies only
IV. BLANKET RELEASE (OPTIONAL) All documents issued under the following contract/grant/project number	ied - Limitations for all do	ed in Sections II and III.  cuments processed in the STI of conform to blocks as checked in	system undar the blanket i Section II.
Typed Name of Project Officer/Technical Monitor Office Code Signa	uture		Date
VI. PROGRAM OFFICE REVIEW Approved Not Approved		. Mark of the company	
Typed Name of Program Office Representative Program Office and Code Signa	iture		Date
VII. INTERNATIONAL AFFAIRS DIVISION REVIEW  ☐ Open, domestic conference presentation approved. ☐ Foreign publication/presentation approved. ☐ The following Export controlled limitation is not application/presentation approved.	icable. on (ITAR/EAR) is assigne	ed to this document:	
International Affairs Div. Representative Title			Date
VIII. EXPIRATION OF REVIEW TIME The document is being released in accordance with the availability category and limitation checked in Section Office within 20 days of submission, as specified by NHib 2200.2, and approval by the International Affair Name & Title	Code		Date
a. This document may be released on		SA CASI	Date
b. The document was processed on		Alexander and a second a second and a second a second and a second a second and a second and a second and a s	